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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,437	07/09/2003	Hans F. van Rietschote	5760-12200	9169

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EXAMINER

TRUONG, CAMQUY

ART UNIT	PAPER NUMBER
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2195

DATE MAILED: 06/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/616,437

Applicant(s)

VAN RIETSCHOTE ET AL.

Examiner

Camquy Truong

Art Unit

2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-18, 20-27 and 31-33 is/are rejected.
- 7) ☒ Claim(s) 5-7, 19 and 28-30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/16/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-33 are presented for examination.
2. In view of the appeal brief filed on March 6, 2006, PROSECUTION IS HEREBY REOPENED. Examiner regrets this decision due to new found prior art. The non-final rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, the appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below.

Claim Rejections - 35 USC § 102(b)

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4, 8-18, 20-27, and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Jacob Gorm Hansen et al. (hereinafter "Jacob") ("Nomadic Operating Systems", pages 1-81, December 2002).

4. As to claim 1, Jacob teaches the invention as claimed including:

a cluster comprising a plurality of computer systems, wherein each of the plurality of computer systems is configured to execute one or more virtual machines (page 2, lines 6-7; page 8, lines 29-32; page 17, lines 5-7; page 22, lines 17-28), each of the plurality of computer systems comprising hardware and a plurality of instructions that when executed on the hardware, detects that a first load of a first computer system of the plurality of computer systems exceeds a second load of a second computer system of the plurality of computer systems and migrates at least a first virtual machine executing on the first computer system to the second computer system responsive to detecting that the first load exceeds the second load (page 22, lines 31-34; page 59, lines 12-18).

5. As to claim 2, Jacob teaches the first virtual machine executes on the second computer system independent of the first computer system, even if the first virtual machine was initially launched on the first computer system (page 16, lines 1-2).

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6. As to claims 3-4, Jacob teaches the plurality of instructions, when executed on the first computer system, select the second computer system to compare loads (page 22, lines 28-33).

7. As to claim 8, Jacob teaches the first virtual machine has a first corresponding load on the first computer system and a second corresponding load on the second computer system, and wherein the first corresponding load differs from the second corresponding load (MOSIX attempts to balance the processor and memory load in the cluster, page 22, lines 17-19 and lines 27-29), wherein the first computer system is configured to transmit one or more load factors to the second computer system (dispersing load information form each computer to a random subset of the cluster, page 22, lines 29-30), and wherein the second computer system is configured to calculate the second corresponding load from the one or more load factors (decides that it has become too loaded, page 22, lines 31-32), and wherein the first computer system and the second computer system are configured to exchange the first corresponding load and the second corresponding load to select the first virtual machine for migration (page 22, lines 32-34).

8. As to claim 9, Jacob teaches the first computer has a corresponding load that is calculated as a weighted combination of measurements of usage of two or more resources of the first computer system (page 22, lines 27-29).

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9. As to claim 10, Jacob teaches the measurements of usage include an amount of times that the first virtual machine is executing in a central processing unit of the first computer system (page 61, lines 1-32).

10. As to claim 11, Jacob teaches the measurements of usage include an amount of input/output activity generated by the first virtual machine during execution (page 22, lines 27-28).

11. As to claim 12, Jacob teaches the measurements of usage include an amount of memory occupied by the first virtual machine (page 22, line 29; page 61, lines 48-62).

12. As to claim 13, Jacob teaches each of the plurality of computer systems include a schedule having a plurality of entries, each entry corresponding to program to be executed on the respective one of the plurality of computer systems (page 22, lines 31-34; page 59, lines 12-18), and wherein migrating the program comprises deleting the entry corresponding to the computer in the schedule of the first computer system and inserting the entry corresponding to the computer in the schedule of the second computer system (page 22, lines 32-34; page 59, lines 15-17).

13. As to claim 14, Jacob teaches:

scheduling one or more virtual machines for execution on hardware (page 22, lines 31-34; page 59, lines 12-18);

The first computer system detecting that the first computer system has a first load that exceeds a second load of a second computer system of the plurality of computer systems (page 22, lines 31-32; page 59, lines 12-15); and

The first computer system migrating at least a first virtual machine executing on the first computer system to second computer system of the plurality of computer systems responsive to the detecting (page 22, 32-34; page 59, lines 15-18).

14. As to claim 15, Jacob teaches the first virtual machine executes on the second computer system independent of the first computer system, even if the first virtual machine was initially launched on the first computer system (page 16, lines 1-2).

15. As to claims 16-18, Jacob teaches:

selecting the second computer system to compare loads (page 22, lines 28-33);
and

selecting the first virtual machine to migrate to the second computer system responsive to the first load exceeding the second load (page 59, lines 13-15).

16. As to claim 20, it is rejected for the same reason as claim 8.

17. As to claim 21, Jacob teaches the first computer has a corresponding load that is calculated as a weighted combination of measurements of usage of two or more resources of the first computer system (page 22, lines 27-29).

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18. As to claim 22, it is rejected for the same reason as claim 13.
19. As to claim 23, it is rejected for the same reason as claim 14.
20. As to claim 24, Jacob teaches schedule the one or more virtual machines for execution on hardware comprising the first computer system (page 22, lines 31-34; page 59, lines 12-18).
21. As to claim 25, Jacob teaches the first virtual machine executes on the second computer system independent of the first computer system, even if the first virtual machine was initially launched on the first computer system (page 16, lines 1-2).
22. As to claims 26-27, Jacob teaches the plurality of instructions, when executed on the first computer system, select the second computer system to compare loads (page 22, lines 28-33)
23. As to claim 31, it is rejected for the same reason as claim 8.
24. As to claim 32, it is rejected for the same reason as claim 21.
25. As to claim 33, it is rejected for the same reason as claim 13.

Allowable Subject Matter

26. Claim 5-7, 19 and 28-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion


27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Camquy Truong whose telephone number is (571) 272-3773. The examiner can normally be reached on 8AM – 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3756.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIP. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIP system, contact the Electronic Business Center (EBC) at 866-217-9197(toll-free).

Camquy Truong

May 26, 2006


SUPERVISOR, PATENT EXAMINER